

FIG. 1

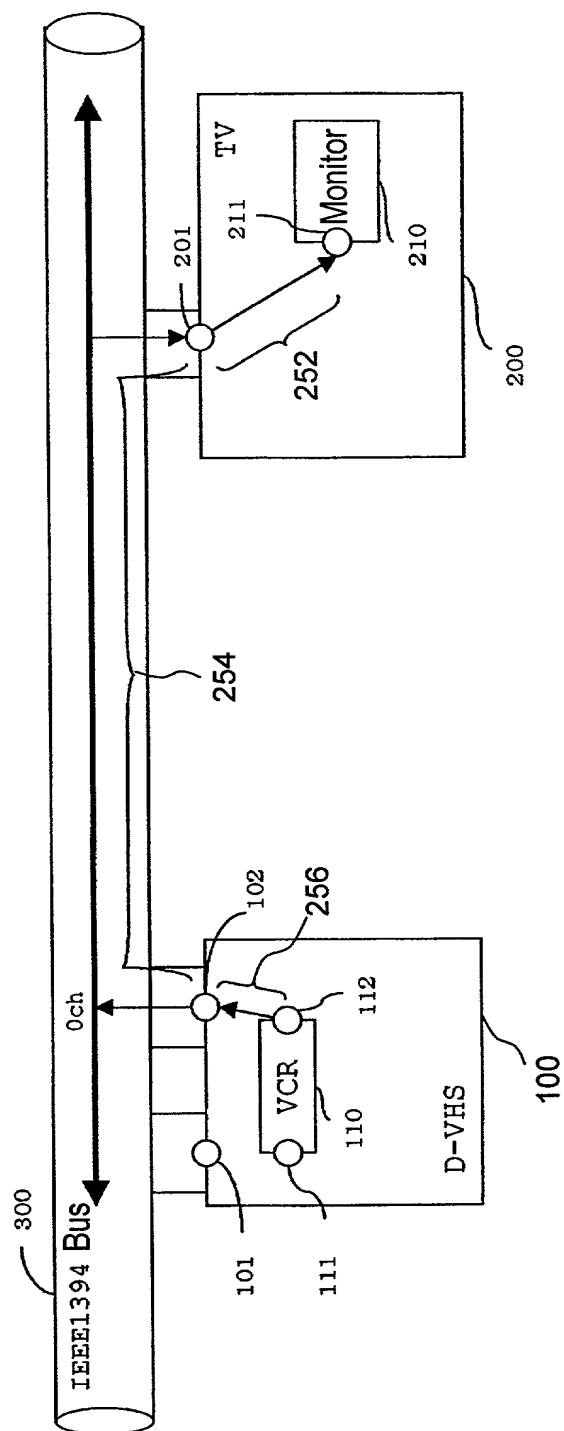


FIG. 2

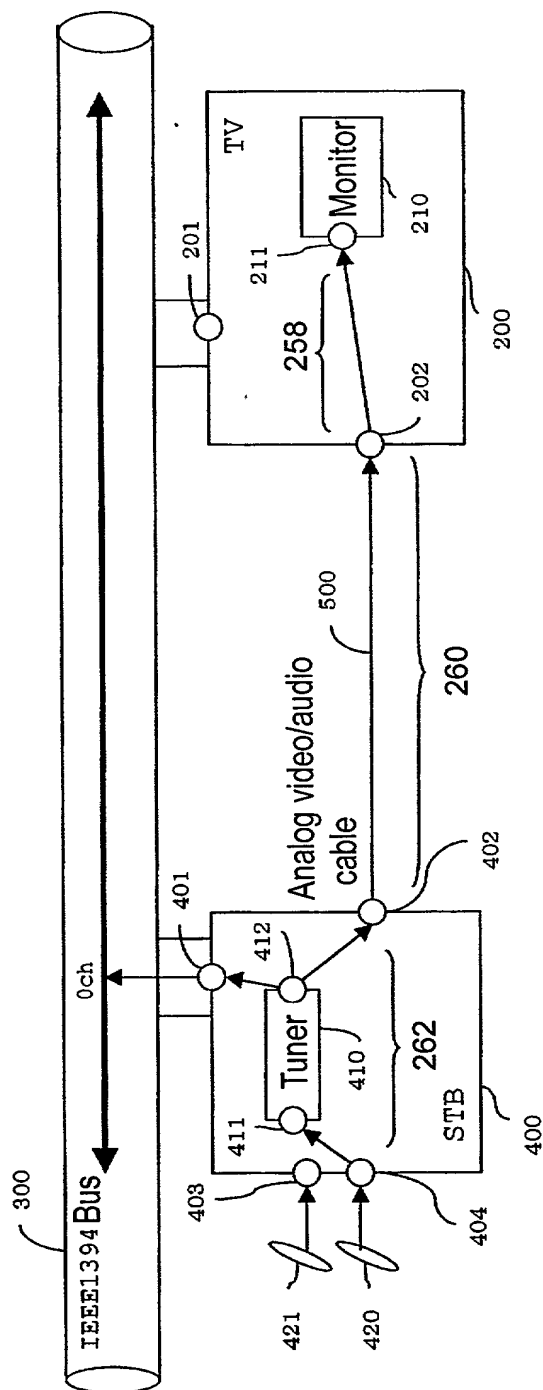


FIG. 3(a)

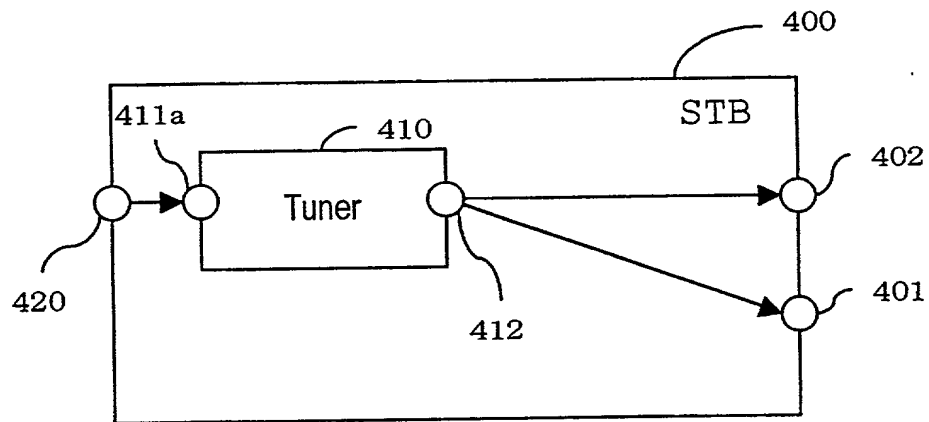


FIG. 3(b)

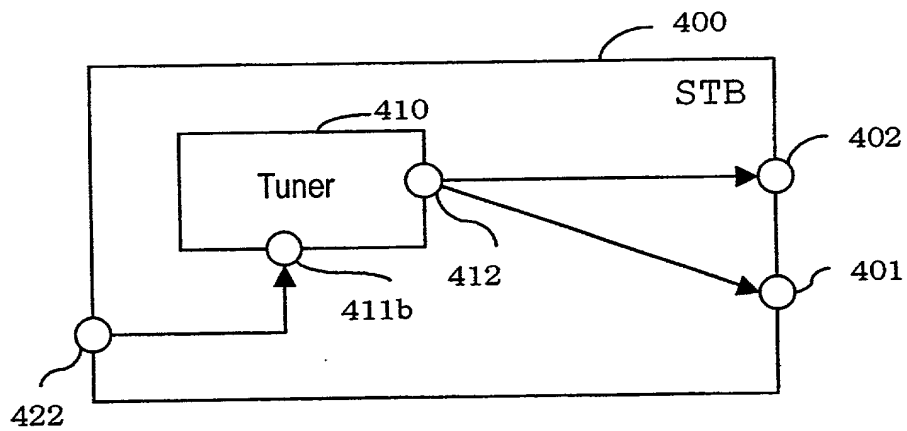


FIG. 4

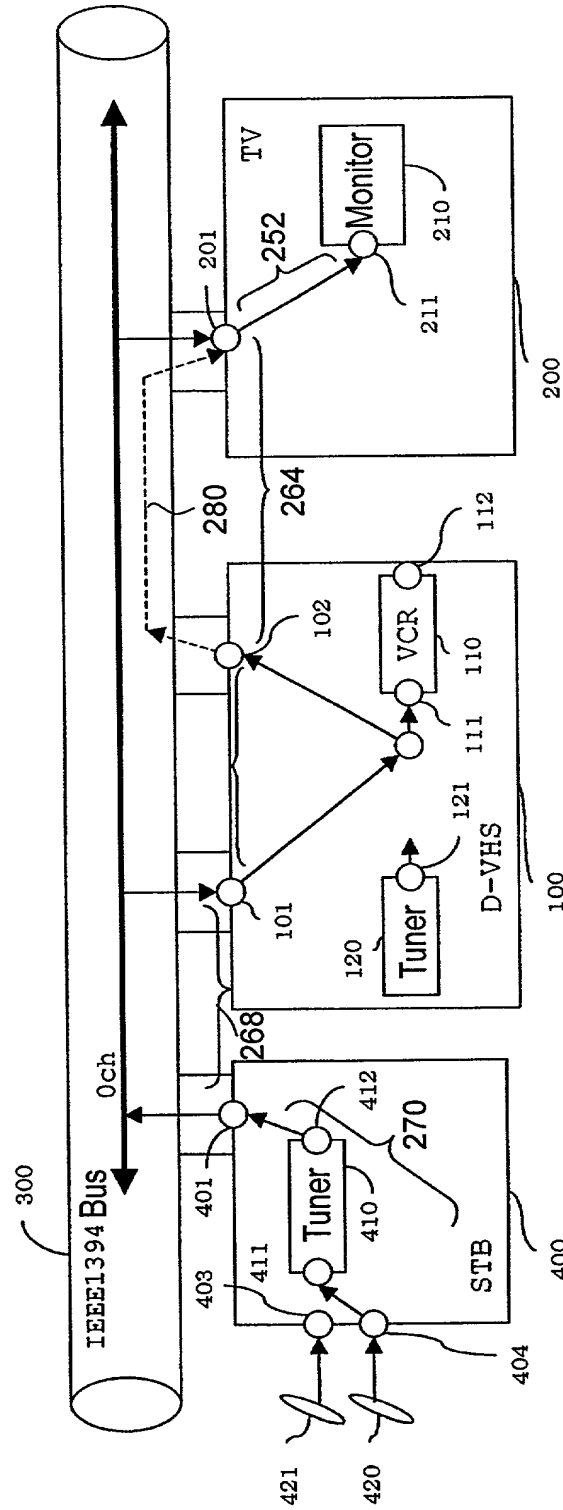


FIG. 5

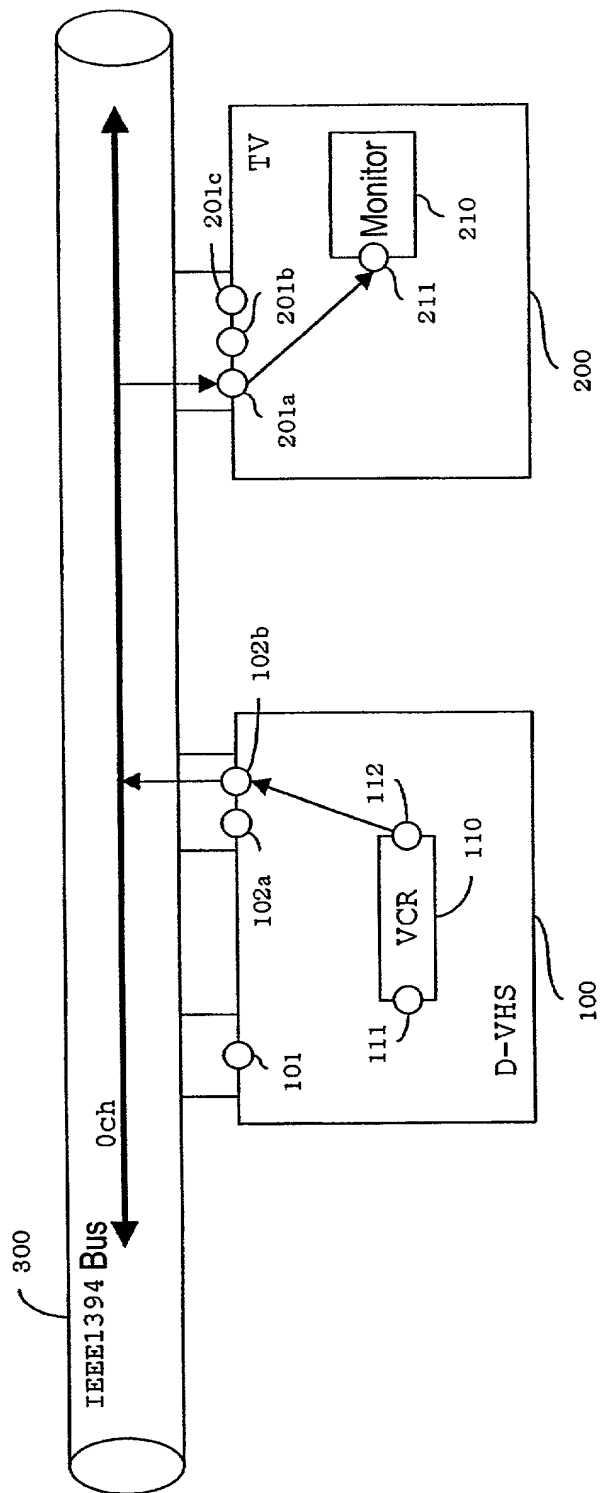


FIG. 6

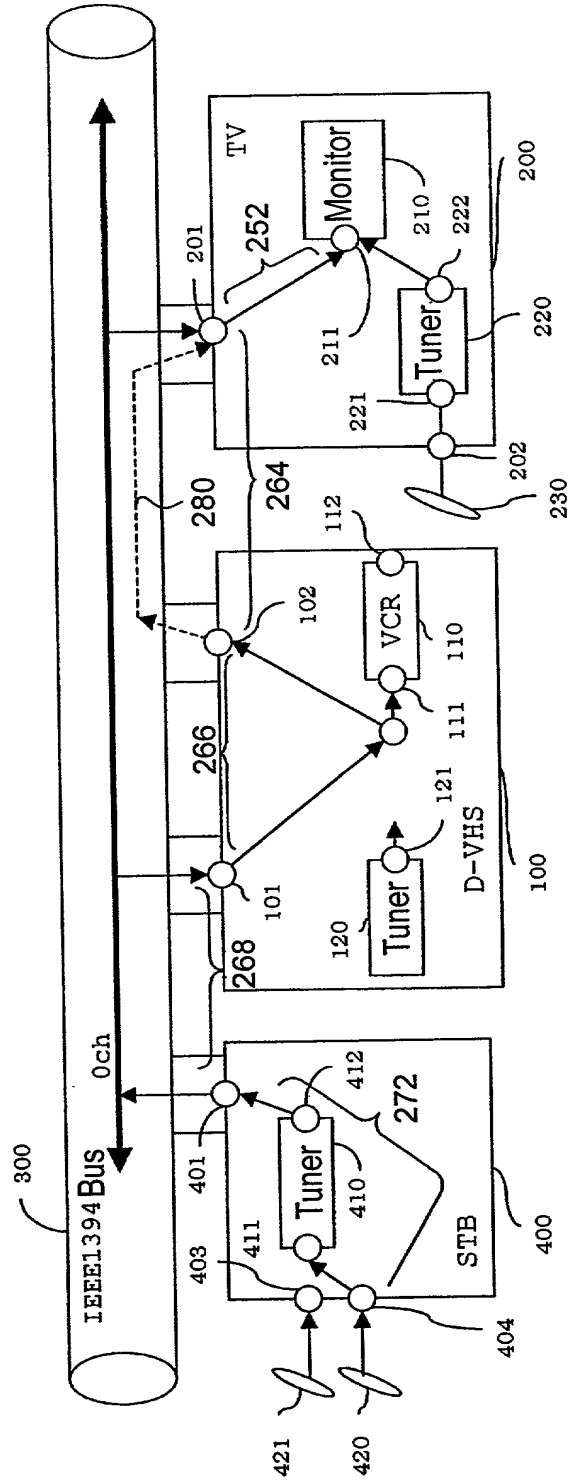


FIG. 7(a)

opcode	msb	INTERNAL SIGNAL SOURCE(26 ₁₆)	lsb
operand[0]		plug	
operand[1]		signal_source_number	
operand[2]		FF ₁₆	
operand[3]		FF ₁₆	
operand[4]		FF ₁₆	
operand[5]		FF ₁₆	
operand[6]		FF ₁₆	
operand[7]		FF ₁₆	
operand[8]		FF ₁₆	

FIG. 7(b)

value	plug
0-1E ₁₆	Serial Bus OPCR[0]-OPCR[30]
1F ₁₆ -7E ₁₆	Reserved
7F ₁₆	Reserved
80 ₁₆ -9E ₁₆	External output plug 0-30
9F ₁₆ -99 ₁₆	Reserved
A0 ₁₆ -BE ₁₆	Serial Bus Asynchronous output plug[0]-[30]
BF ₁₆	Reserved
C0 ₁₆ -FD ₁₆	Reserved
FE ₁₆	Reserved
FF ₁₆	Reserved

FIG. 7C

value	plug
0-1E ₁₆	Destination plug 0-30
1F ₁₆ -FD ₁₆	Reserved
FE ₁₆	Reserved
FF ₁₆	Reserved

FIG. 8(a)

opcode	msb	INTERNAL SIGNAL SOURCE (26 ₁₆)	lsb
operand[0]	plug		
operand[1]	signal_source_number		
operand[2]	total_signal_source		
operand[3]	FF ₁₆		
operand[4]	signal_source_plug		
operand[5]	data type	11	external_input_type
operand[6]	FF ₁₆		
operand[7]	FF ₁₆		
operand[8]	FF ₁₆		

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FIG. 8(b)

	data type
00	No information
01	Video
10	Audio
11	Audio/Video

FIG. 8(c)

	plug type
0-1E ₁₆	Serial Bus 1PCR[0]-1PCR[30]
1F ₁₆ -7E ₁₆	Reserved
7F ₁₆	Reserved
80 ₁₆ -9E ₁₆	External input plug 0-30
9F ₁₆ -99 ₁₆	Reserved
A0 ₁₆ -BE ₁₆	Serial Bus Asynchronous input plug[0]-[30]
BF ₁₆	Reserved
C0 ₁₆ -FD ₁₆	Reserved
FE ₁₆	Reserved
FF ₁₆	Reserved

FIG. 8(d)

	external plug type
0000	analogue
0001	SCART
0010-0110	reserved
0111	antenna
1000	IEC958()coaxial
1001	IEC958(optical)
1010-1110	reserved
1111	(Serial Bus or Async)

FIG. 9(a)

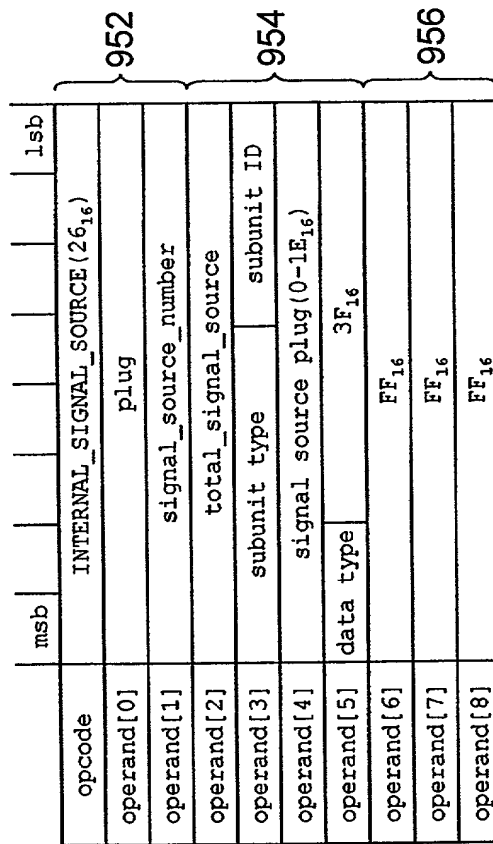


FIG. 9(b)

value	plug
0-1E ₁₆	Source plug 0-30

FIG. 10(a)

msb												lsb	
opcode		INTERNAL_SIGNAL_SOURCE(26 ₁₆)											
operand[0]		plug(0-1E ₁₆)											
operand[1]		signal_source_number											
operand[2]		total_signal_source											
operand[3]		FF ₁₆											
operand[4]		signal_source_plug											
operand[5]		data type		11		external plug type							
operand[6]		00		IEEE1394 isochronous channel									
operand[7]		output status				F ₁₆							
operand[8]		FF ₁₆											

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FIG. 10(b)

msb																			lsb
opcode		INTERNAL_SIGNAL_SOURCE(2F ₁₆)																	
operand[0]		plug(0-1E ₁₆)																	
operand[1]		signal_source_number																	
operand[2]		total_signal_source																	
operand[3]		subunit type				subunit ID													
operand[4]		signal source plug																	
operand[5]		data type				3F ₁₆													
operand[6]		00				IEEE1394 isochronous channel													
operand[7]		output status				F ₁₆													
operand[8]		FF ₁₆																	

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FIG. 10(c)

Value	output_status	IEEE1394 isochronous channel
0000	Outputting	Channel No. output by device itself
0001	Virtual outputting	Channel No. output by other devices
0010	Not outputting	FF ₁₆
0011-1111	reserved	reserved

FIG. 11(b)

	external output status
0000	active
0001	reserved
0010	inactive
0011-1111	reserved

FIG. 13(a)

msb	INTERNAL_SIGNAL_SOURCE(26 ₁₆)	lsb
opcode	plug	
operand[0]	signal_source_number	
operand[1]	FF ₁₆	
operand[2]	FF ₁₆	
operand[3]	signal_source_plug	
operand[4]	data type	3F ₁₆
operand[5]	FF ₁₆	
operand[6]	FF ₁₆	
operand[7]	FF ₁₆	
operand[8]	FF ₁₆	

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FIG. 13(b)

msb	INTERNAL_SIGNAL_SOURCE(26 ₁₆)	lsb
opcode	plug	
operand[0]	signal_source_number	
operand[1]	FF ₁₆	
operand[2]	subunit_type	subunit ID
operand[3]	signal_source_plug	
operand[4]	data type	3F ₁₆
operand[5]	FF ₁₆	
operand[6]	FF ₁₆	
operand[7]	FF ₁₆	
operand[8]	FF ₁₆	

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FIG. 13(c)

value	plug type
0-1E ₁₆	Serial Bus iPCR[0]-iPCR[30]
1F ₁₆ -7E ₁₆	Reserved
7F ₁₆	Any available Serial Bus plug iPCR[x]
80 ₁₆ -9E ₁₆	External input plug 0-30
9F ₁₆ -99 ₁₆	Reserved
A0 ₁₆ -BE ₁₆	Serial Bus Asynchronous input plug[0]-[30]
BF ₁₆	Any available Serial Bus Asynchronous input plug
C0 ₁₆ -FD ₁₆	Reserved
FE ₁₆	Reserved
FF ₁₆	Any available External input plug

FIG. 13(d)

value	plug
0-1E ₁₆	Source plug 0-30
1F ₁₆ -FC ₁₆	Reserved
FF ₁₆	Any available source plug

FIG. 14(a)

msb								lsb			
opcode		INTERNAL_SIGNAL_SOURCE(26 ₁₆)									
operand[0]		plug									
operand[1]		signal_source_number									
operand[2]		FF ₁₆									
operand[3]		FF ₁₆									
operand[4]		signal_source_plug									
operand[5]		data type		3F ₁₆							
operand[6]		FF ₁₆									
operand[7]		FF ₁₆									
operand[8]		FF ₁₆									

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FIG. 14(b)

	msb								lsb
opcode	INTERNAL_SIGNAL_SOURCE(26 ₁₆)								
operand[0]	plug								
operand[1]	signal_source_number								
operand[2]	FF ₁₆								
operand[3]	subunit_type				subunit_ID				
operand[4]	signal_source_plug								
operand[5]	data type			3F ₁₆					
operand[6]	FF ₁₆								
operand[7]	FF ₁₆								
operand[8]	FF ₁₆								

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FIG. 14(c)

	plug type
0-1E ₁₆	Serial Bus OPCR[0]-OPCR[30]
1F ₁₆ -7E ₁₆	Reserved
7F ₁₆	Any available Serial Bus plug OPCR[x]
80 ₁₆ -9E ₁₆	External output plug 0-30
9F ₁₆ -99 ₁₆	Reserved
A0 ₁₆ -BE ₁₆	Serial Bus Asynchronous output plug[0]-[30]
BF ₁₆	Any available serial Bus asynchronous output plug[x]
C0 ₁₆ -FD ₁₆	Reserved
FE ₁₆	Reserved
FF ₁₆	Any available external output plug

FIG. 15(a)

	msb							lsb
opcode	EXTERNAL SIGNAL SOURCE (27_{16})							
operand[0]	plug							
operand[1]	FF_{16}							
operand[2]	FF_{16}							
operand[3]	FF_{16}							
operand[4]	FF_{16}							
operand[5]	FF_{16}							
operand[6]	FF_{16}							
operand[7]	FF_{16}							
operand[8]	FF_{16}							

FIG. 15(b)

value	plug
$0-1E_{16}$	Serial Bus iPCR[0]-iPCR[30]
$1F_{16}-7E_{16}$	Reserved
$7F_{16}$	Reserved
$80_{16}-9E_{16}$	External input plug 0-30
$9F_{16}-99_{16}$	Reserved
$A0_{16}-BE_{16}$	Serial Bus Asynchronous input plug[0]-[30]
BF_{16}	Reserved
$C0-FD_{16}$	Reserved
FE_{16}	Reserved
FF_{16}	Reserved

FIG. 16(a)

	msb							lsb	
opcode	EXTERNAL_SIGNAL_SOURCE (27 ₁₆)								1652
operand[0]	plug (0-1E ₁₆)								
operand[1]	output_state				F ₁₆				1654
operand[2]	00		IEEE1394 isochronous channel						
operand[3]	Node ID of signal source (when unkow, FF ₁₆)								1654
operand[4]	OPCR of signal source (when unkow, FE ₁₆)								
operand[5]	EUI-64 of signal source (when unkow, all ₁)								1654
operand[6]									
operand[7]									
operand[8]									

FIG. 16(b)

Value	output_status	IEEE1394 isochorounous channel
0000	Outputting	Channel No. output by device itself
0001	Virtual outputting	Channel No. output by other devices
0010	Not outputting	FF ₁₆
0011-1111	reserved	reserved

FIG. 17

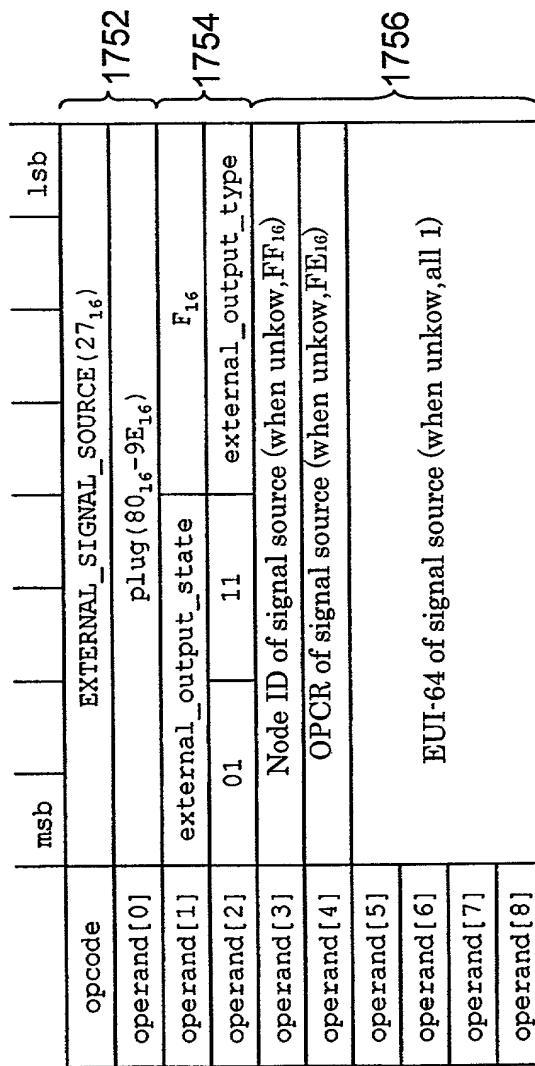


FIG. 18

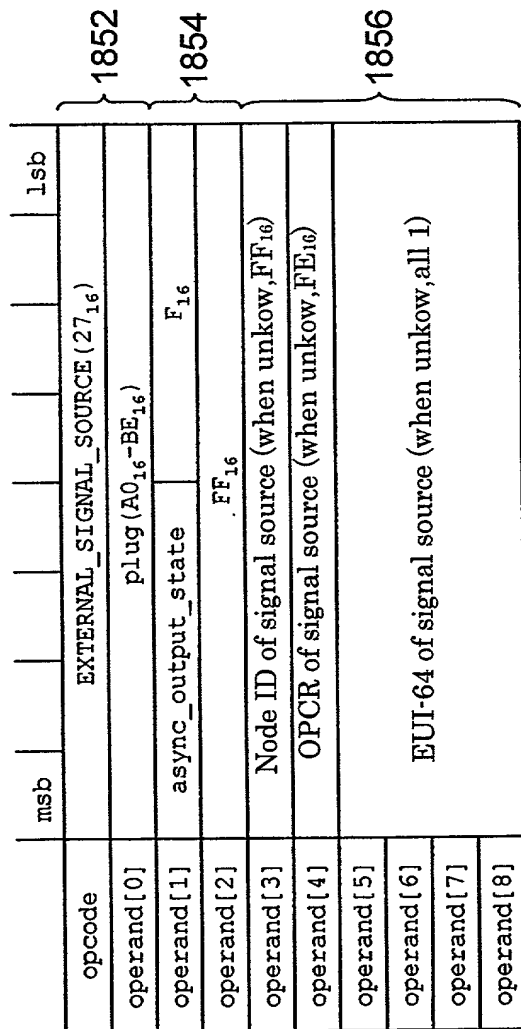


FIG. 19

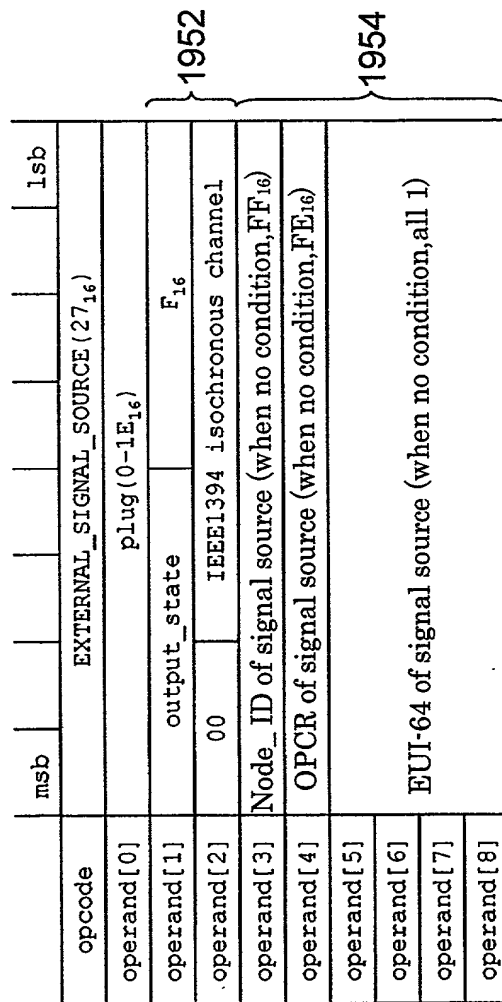


FIG. 20

	msb							lsb
opcode	EXTERNAL_SIGNAL_SOURCE (27 ₁₆)							
operand[0]	plug (80 ₁₆ -9E ₁₆)							
operand[1]	external_output_state				F ₁₆			
operand[2]	01		11	external_output_type				
operand[3]	Node_ID of signal source (when no condition, FF ₁₆)							
operand[4]	OPCR of signal source (when no condition, FE ₁₆)							
operand[5]	EUI-64 of signal source (when no condition, all 1)							
operand[6]								
operand[7]								
operand[8]								

2052

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FIG. 21

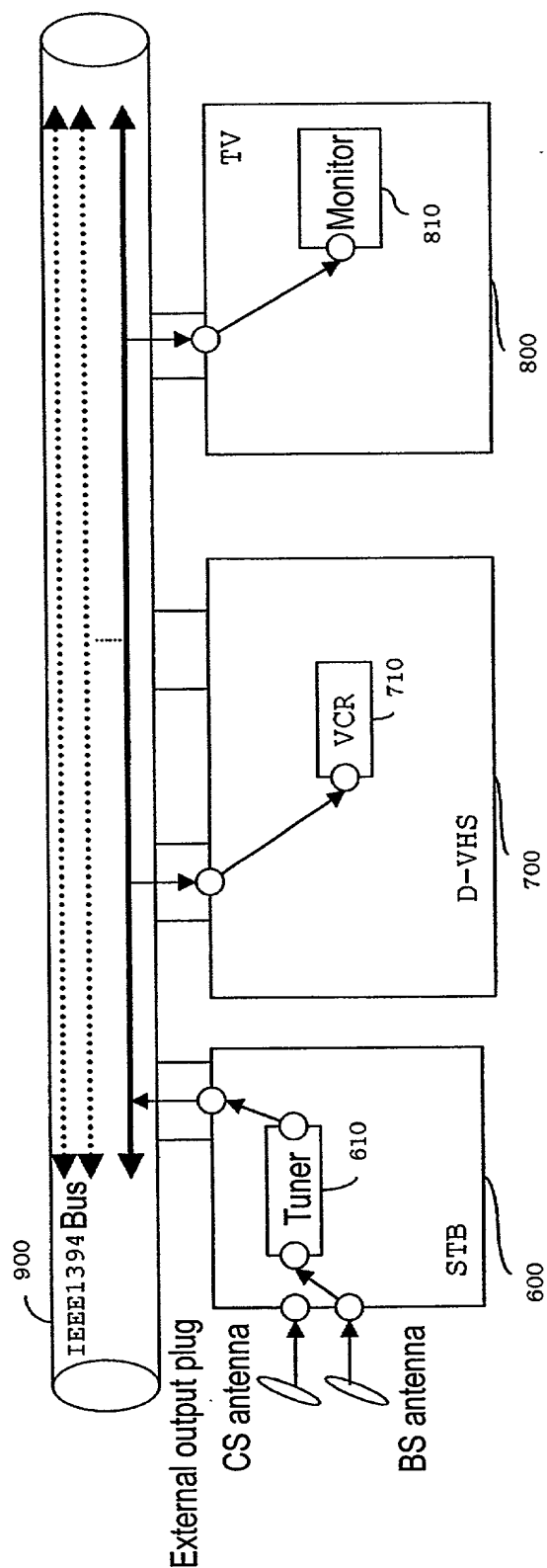


FIG. 22(a)

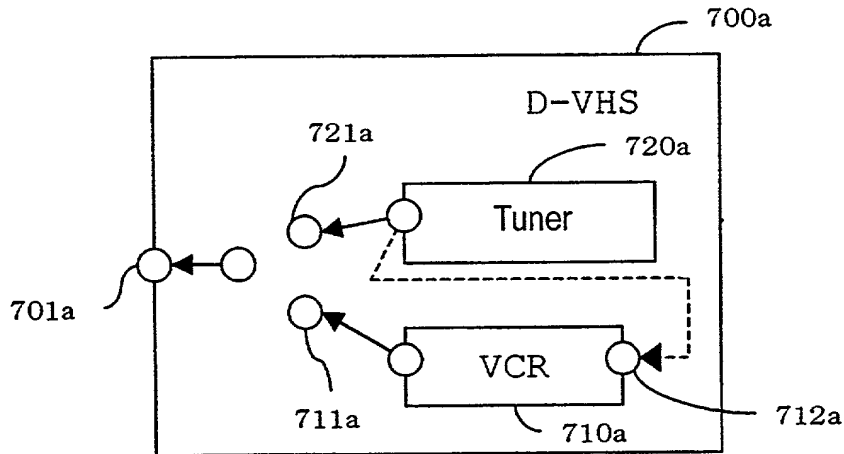


FIG. 22(b)

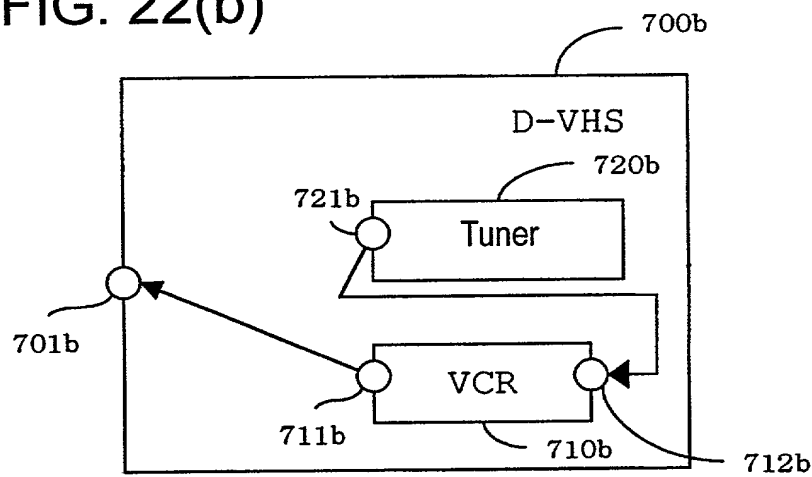


FIG. 23(a)

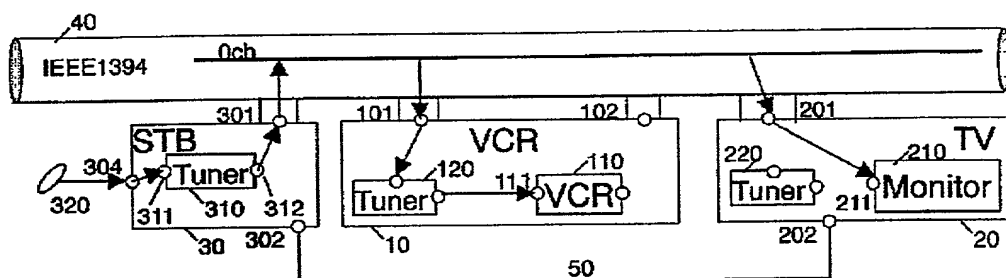
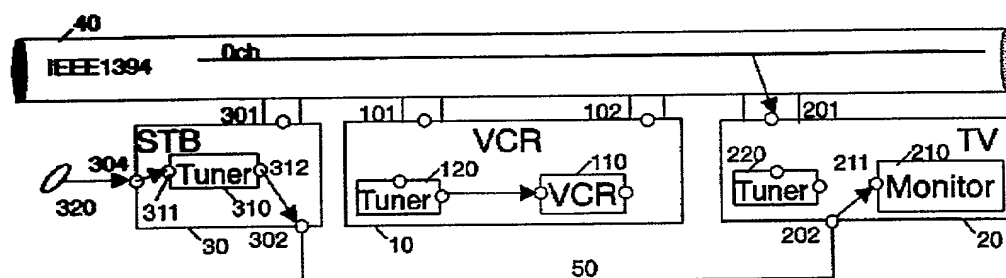


FIG. 23(b)



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FIG. 24

	msb					lsb
opcode	SIGNAL SOURCE (28 ₁₆)					
operand[0]	FF ₁₆					
operand[1]	FF ₁₆					
operand[2]	FF ₁₆					
operand[3]	signal destination subunit type			signal destination subunit ID		
operand[4]	signal destination plug					

SIGNAL SOURCE status command format

FIG. 25

	msb					lsb
opcode	SIGNAL SOURCE (28 ₁₆)					
operand[0]	output status		conv	connect status		
operand[1]	signal_source					
operand[2]						
operand[3]	signal destination subunit type			signal destination subunit ID		
operand[4]	signal destination plug					

SIGNAL SOURCE status response format

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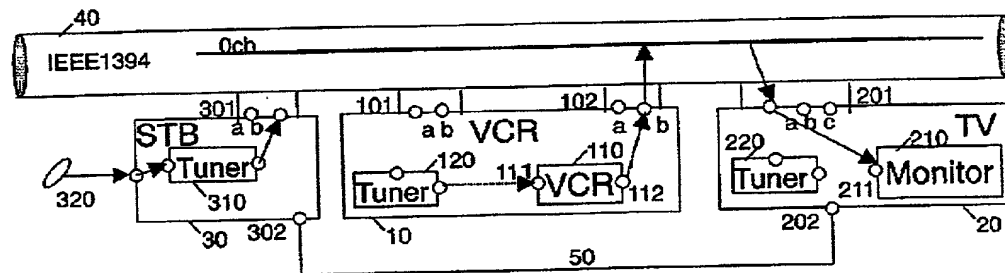
FIG. 26(a)

value	output_status
0000	effective packet output
0001	not effective
0010	insufficient resource
0011	ready
0100	virtual output
0101-1111	reserved

FIG. 26(b)

value	connect_status
000	normal
001	through
010	modified
011	OSD
100	converted
101-110	reserved
111	(not used)

FIG. 27



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FIG. 28

	msb						lsb
opcode	SIGNAL_SOURCE (28 ₁₆)						
operand[0]	FF ₁₆						
operand[1]	signal_source						
operand[2]							
operand[3]	signal destination subunit type					signal destination subunit ID	
operand[4]	signal destination plug						

SIGNAL SOURCE control command format

FIG. 29

	msb						lsb
opcode	SIGNAL_SOURCE (28 ₁₆)						
operand[0]	reserved					connect status	
operand[1]	signal_source						
operand[2]							
operand[3]	signal destination subunit type					signal destination subunit ID	
operand[4]	signal destination plug						

SIGNAL SOURCE control response format

FIG. 30(a)

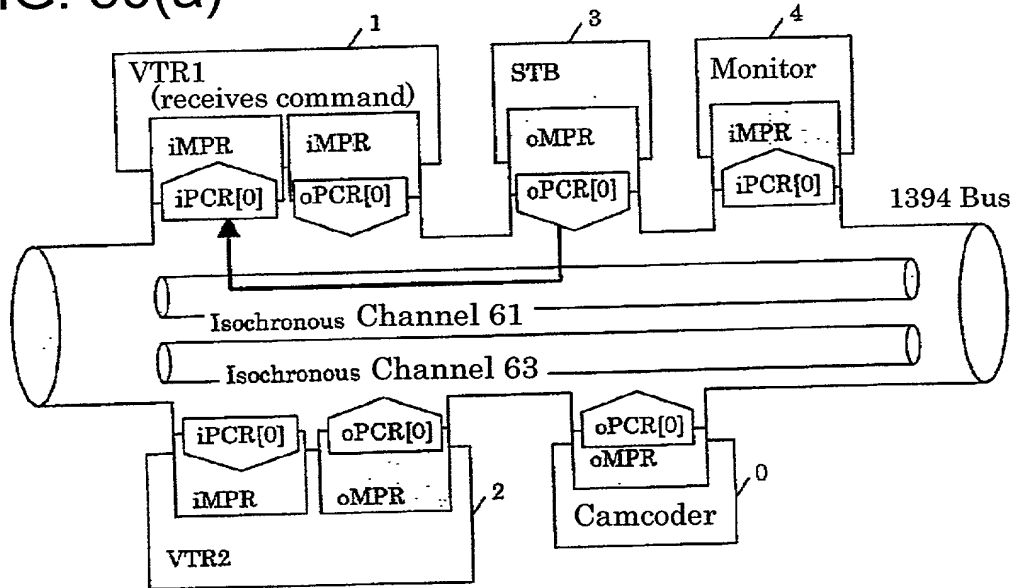


FIG. 30(b)

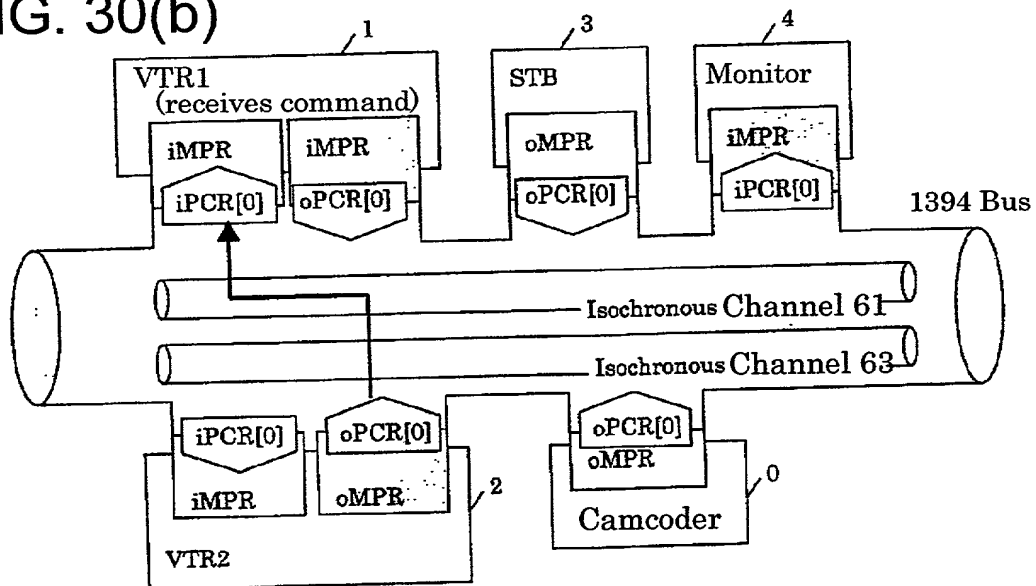


FIG. 31

	msb						lsb
opcode	INPUT SELECT (27 ₁₆)						
operand[0]	plug						
operand[1]	0000			level			
operand[2]	status						
operand[3]	input_type						
operand[4]	reserved (all 0)						
operand[5]	connected node_ID						
operand[6]							
operand[7]	connected plug_ID						
operand[8]	reserved (all 0)						

FIG. 32

value	level	meaning
0000	Level0	If ready, establish connection
0001	Level1	If broad cast input only, establish connection, even if stopping it
0010	Level2	Establish connection, even if stopping p-to-p (Target established)
0011-1111	reserved	

FIG. 33

value	input_type
00 - 3F ₁₆	isochronous channel to input
40 ₁₆	any available isochronous channel
41-FF ₁₆	reserved

FIG. 34

value	meaning	return	iPCR
0000	Ready	ACCEPTED	active
0001	Receiving another broadcast input	REJECTED	active
0010	Inputting another p-to-p Input (owner)	REJECTED	active
0100	Inputting another p-to-p Input (not owner)	REJECTED*	active
0101	Band width, ch are not taken	REJECTED*	idle, ready, suspended
0110	No node, plug of partner	REJECTED*	-
0111	No internal connection in iPCR	REJECTED*	idle, ready, suspended
1000-1100	reserved	-	
1110	Any other reason	REJECTED	-
1111-	reserved	-	-

FIG. 35

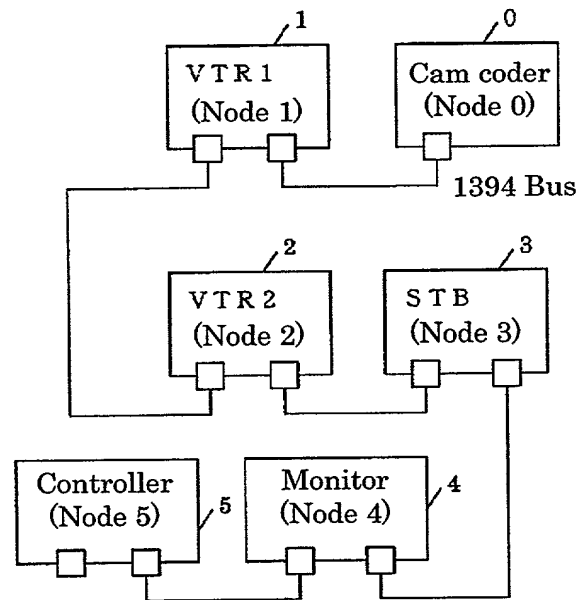


FIG. 36

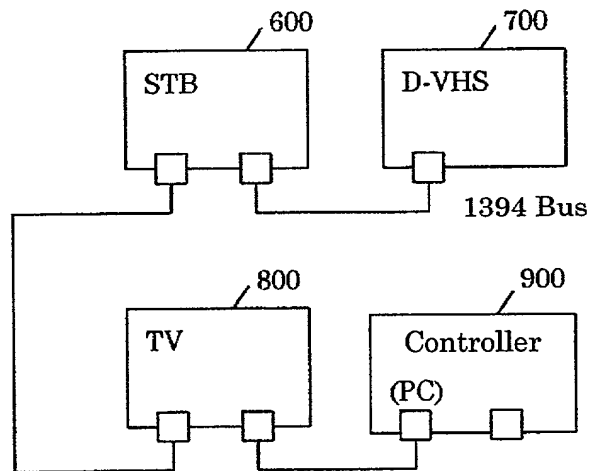


FIG. 37(a)

	msb						lsb
opcode	CONNECT (24 ₁₆)						
operand[0]	3F ₈					lock	perm
operand[1]	source_subunit_type				source_subunit_ID		
operand[2]	source_plug						
operand[3]	destination_subunit_type				destination_subunit_ID		
operand[4]	destination_plug						

FIG. 37(b)

	msb						lsb
opcode	CONNECT (24 ₁₆)						
operand[0]	FF ₈						
operand[1]	FF ₈						
operand[2]	FE ₁₆						
operand[3]	destination_subunit_type					destination_subunit_ID	
operand[4]	destination_plug						

Reference numerals in the drawings

100	D-VHS
700	D-VHS
700a	D-VHS
700b	D-VHS
750	D-VHS
101	Digital input plug
201	Digital input plug
201a	Digital input plug
201b	Digital input plug
201c	Digital input plug
422	Digital input plug
102	Digital output plug
102a	Digital output plug
102b	Digital output plug
401	Digital output plug
701a	Digital output plug
701b	Digital output plug
110	VCR
710	VCR
710a	VCR
710b	VCR
111	Destination plug
211	Destination plug
221	Destination plug
411	Destination plug
411a	Destination plug
411b	Destination plug
710a	Destination plug
710b	Destination plug
711	Destination plug
112	Source plug
121	Source plug
232	Source plug

412 Source plug
712 Source plug
721a Source plug
721b Source plug
120 Tuner
220 Tuner
410 Tuner
610 Tuner
720 Tuner
720a Tuner
720b Tuner
200 TV
800 TV
202 External input plug
403 External input plug
404 External input plug
420 External input plug
210 Monitor
810 Monitor
230 Satellite broadcast reception antenna
420 Satellite broadcast reception antenna
300 IEEE1394 bus
900 IEEE1394 bus
400 STB
600 STB
402 External output plug
421 Satellite communication antenna
500 Analog video/audio signal cable
10 D-VHS
20 TV
30 STB
40 IEEE139bus
50 Analog video/audio signal cable
210 Monitor

211	Destination plug
301	Digital output plug
302	Destination plug
310	Tuner
6	Camcoder
1	VTR1
2	VTR2
3	STB
4	Monitor
5	Controller
252	Path
254	Path
256	Path
258	Path
260	Path
262	Path
264	Path
266	Path
268	Path
270	Path
272	Path
280	Virtual output path
852	The same contents as command
854	Response to signal source
856	Response to output
952	The same contents as command
954	Response to signal source
956	Response to output
1052	The same contents as command
1054	Response to signal source
1056	Response to output
1058	The same contents as command
1060	Response to signal source
1062	Response to output

1152 The same contents as command
1154 Response to signal source
1156 Response to output
1158 The same contents as command
1160 Response to signal source
1162 Response to output
1252 The same contents as command
1254 Response to signal source
1256 Response to output
1258 The same contents as command
1260 Response to signal source
1262 Response to output
1352 Response to signal source
1354 Inquiry to output
1356 Response to signal source
1358 Response to output
1452 Inquiry to signal source
1454 Inquiry to output
1456 Response to signal source
1458 Response to output
1652 The same contents as command
1654 Response to output
1656 Response to signal source
1752 The same contents as command
1754 Response to output
1756 Response to signal source
1852 The same contents as command
1854 Response to output
1856 Response to signal source
1952 Response to output
1954 Response to signal source
2052 Response to output
2054 Response to signal source